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# NOTICE OF ALLOWANCE AND ISSUE FEE DUE

25M1/0716

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| APPLICATION NO. | FILING DATE | TOTAL CLAIMS | EXAMINER AND GROUP ART UNIT | | DATE MAILED |
|---|---|---|---|---|---|
| 08/603,597 | 02/16/96 | 014 | ROSEEN, R | 2509 | 07/16/97 |

First Named Applicant: MCGOWAN, JOHN E.

TITLE OF INVENTION: FLEXIBLE, HIGH-PERFORMANCE STATIC RAM ARCHITECTURE FOR FIELD-PROGRAMMABLE GATE ARRAYS

| ATTY'S DOCKET NO. | CLASS-SUBCLASS | BATCH NO. | APPLN. TYPE | SMALL ENTITY | FEE DUE | DATE DUE |
|---|---|---|---|---|---|---|
| 2 ACT-185 | 326-040.000 | F29 | UTILITY | NO | $1290.00 | 10/16/97 |

***THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.***

***THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.***

## *HOW TO RESPOND TO THIS NOTICE:*

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

***IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.***

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| APPLICATION NUMBER | FILING DATE | FIRST NAMED APPLICANT | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 08/603,597 | 02/16/96 | MCGOWAN | J ACT-185 |

EXAMINER

25M1/0716

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ART UNIT 2509 | PAPER NUMBER 9

DATE MAILED: 07/16/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

## NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to 6-9-97 amendment.

☒ The allowed claim(s) is/are 1-14.

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 9.

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.**

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4-6

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Interview Summary, PTO-413

☒ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☒ Examiner's Statement of Reasons for Allowance

## Statement of Reasons for Allowance

The prior art does not disclose or make obvious a field programmable gate array architecture having a plurality of horizontal routing channels, a plurality of interconnect conductors, user-programmable interconnect elements, a plurality of vertical routing channels, an array having a plurality of rows and columns of logic function modules, at least a portion of one column of the array including random access memory blocks and means for programming all connected as claimed. The plurality of horizontal routing channels include a plurality of interconnect conductors. Some of the interconnect conductors are segmented by user-programmable interconnect elements. The plurality of vertical routing channels include a plurality of interconnect conductors forming intersections with interconnect conductors in the horizontal routing channels. Some of the interconnect conductors are segmented by user-programmable interconnect elements. User-programmable interconnect elements are connected between selected ones of horizontal and vertical interconnect conductors at selected ones of the intersections. The array having a plurality of rows and columns of logic function modules are superimposed on the horizontal and vertical channels. Each logic function module have at least one input and one output. The at least one input and output of the logic function modules are connected to ones of the interconnect conductors in either or both of the horizontal and vertical routing channels. The random access memory blocks are disposed in the array in place of logic function modules. The at least a portion of a column is adjacent to at least one column of the logic function modules. Each of the random access memory blocks spans a distance of more than one row of the array

such that at least one interconnect conductor in more than one horizontal routing channel passes therethrough and is connected to adjacent logic function modules on either side. Each of the random access memory blocks have address inputs, control inputs, data inputs and data outputs. User-programmable interconnect elements are connected between the address inputs, control inputs, data inputs and data outputs of the random access memory blocks and selected ones of the interconnect conductors in the more than one horizontal routing channel passing therethrough. The means for programming programs selected ones of the user-programmable interconnect conductors to connect the at least one input and output of ones of the logic function modules to one another and to the address inputs, control inputs, data inputs and data outputs of the random access memory blocks.

Any comments considered necessary by applicant **must** be submitted no later than the Payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

## EXAMINER'S AMENDMENT

An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **must** be submitted no later than the payment of the Issue Fee.

The following changes have been made in the claims:

In claim 7, line 4, "read" has been changed to --latched--.

In claim 14, line 4, "read" has been changed to --latched--.

## AUTHORIZATION

Authorization for this Examiner's Amendment was given in a telephone interview with Steven Robbins on Thursday July 10, 1997.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Richard Roseen whose telephone number is (703)-308-4831.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)-308-0956.

Edward Westin

EDWARD P. WESTIN
SUPERVISORY PATENT EXAMINER
GROUP 250

R. R. R.